Regarding claims 1 and 19, the Examiner rejects the claims under 35 USC §103 as being obvious over the Applicant's admitted prior art in view of Hammati. The Examiner alleges that the admitted prior art shows:

a system (detection system 100, see Fig. 1) for detecting ultrasonic displacements (102) in a material under test (remote target 104), comprising:

a seed laser light source (detection laser source 106) that provides first laser beam (108) having a path of propagation;

an ultrasonic induction system (diffuse signal of Fig. 1) which induces ultrasonic displacements (102) in the material under test (104);

a detection system (detector 122, see Fig. 1) which applies said output pulse of said first laser beam to the material under test in order to detect the ultrasonic displacements and generate at least one output signal (Pdet) and a data processor (detection system, inherently includes a data processor for processing analog output 124) to process said at least one output signal of said detection system to obtain data representative of said ultrasonic displacements.

However, the Examiner submits that the Applicant's admitted prior art does not suggest the use of a modulator assembly placed in said path of said first laser beam operable to provide an output pulse having a time-dependent pulse profile.

The Examiner alleges that Hemmati ('480) discloses an optically driven Q-switch that responds to a short pulse of light from diode lasers for producing an output laser pulse from electronic energy stored in a laser medium.

Hemmati ('480) shows a "Q-switch that responds to a short pulse of light, for example, from external light-emitting diodes (LEDs), or diode lasers for producing an output laser pulse from electronic energy stored in a laser medium (Col. 2, Lines 13-17)." Moreover, Figure 2 of Hemmati ('480) "illustrates schematically a solid state laser 20 comprising an ND:host crystal 21 pumped by a source 22 comprising LEDs or diode lasers and an optically driven Q-switch 23 inside *a typical laser cavity defined by mirrors 24 and 25* [emphasis added] (Col. 3, Lines 10-

13)." The "laser cavity" is also an element of each claim (Claims 1-4). Further, the Q-switch is shown to be in the cavity (Figures 1 and 2) and claimed as being in the cavity as an element of each claim (Claims 1-4).

In deference, the electro-optic modulator 132 of the present application (Figure 2) is not necessarily internal to a laser cavity. Moreover, the Q-switch of Hemmati ('480) does not produce the output described in the present application (Figures 3A, 3B, and 3C).

For these reasons among others, the Applicant feels Claims 1 and 19 are allowable. As such, the Applicant respectfully request that these claims be allowed.

Regarding claim 11 is rejected for the reasons set forth for claim 1. Applicant's admitted prior art allegedly shows a multipass optical amplifier 110, and laser light amplification (multipass optical amplifier 110). Further the Examiner alleges that Hemmati discloses a modulator that includes an electronic control to meet the limitations of the controller 11.

However, neither the admitted prior art nor Hemmati ('480) shows "at least one optical isolation assembly..." Therefore, for this reason and the reasons expressed in relation to Claim 1, among others, the Applicant feels that Claim 11 is allowable.

Regarding claims 2, 14, and 20, the Examiner alleges that the Applicant's admitted prior art in view of Hemmati discloses an optically driven laser Q-switch for producing an output laser. However, for the reasons stated above, Hemmati ('480) does not apply. Moreover if a claim depends from a non-obvious independent claim, the claim is non-obvious (MPEP 2143.03).

Regarding claims 3-4, and 12-13, the Examiner alleges that the Applicant's admitted prior art in view of Hemmati discloses a Q-switch where a low-power external optical pulse is used to alter the Q of the laser cavity, thereby to manipulate a high-power output light source with a low-power light source, see col. 2, lines 54-57. However, Claims 3 and 12 relate to the "attenuation characteristic of the material under test" which is not described in the alleged prior art. Claims 4 and 13 relate to "sufficient variation to alter a dynamic range of said detection" which is not described in the alleged prior art. Further, for the reasons stated above in relation to

Claim 1, Hemmati ('480) does not apply. Moreover if a claim depends from a non-obvious independent claim, the claim is non-obvious (MPEP 2143.03).

Regarding claims 5-6, and 15-16, for the reasons stated above in relation to Claim 1, Hemmati ('480) does not apply. Moreover if a claim depends from a non-obvious independent claim, the claim is non-obvious (MPEP 2143.03).

Regarding claims 7-8, the Examiner alleges that Figure 1 of Applicant's admitted prior art discloses a multipass optical amplifier 110. However, Claim 7 recites an "optical isolation assembly" and Claim 8 recites a "optical beam dump." Neither of these is found in the alleged prior art. Further, for the reasons stated above in relation to Claim 1, Hemmati ('480) does not apply. Moreover if a claim depends from a non-obvious independent claim, the claim is non-obvious (MPEP 2143.03).

Regarding claims 9 and 21, the Examiner alleges that Figure 1 of Applicant's admitted prior art shows one laser light amplification assembly (optical amplifier 110). The "laser light amplification assembly" may take various forms and is not limited to an optical amplifier (multipass configuration). Further, for the reasons stated above in relation to Claim 1, Hemmati ('480) does not apply. Moreover if a claim depends from a non-obvious independent claim, the claim is non-obvious (MPEP 2143.03).

Regarding claims 10, 17 and 24, the Examiner alleges that Figure 1 of Applicant's admitted prior art discloses collection optics 116 direct phase-modulated light 112 via fiber optic 118 into interferometer 120 which demodulates the phase-modulated light and directs an output Pdet into detector 122. However, the Examiner does not allege "a data processor." Further, for the reasons stated above in relation to Claim 1, Hemmati ('480) does not apply. Moreover if a claim depends from a non-obvious independent claim, the claim is non-obvious (MPEP 2143.03).

Regarding claims 18 and 25, for the reasons stated above in relation to Claim 1, Hemmati ('480) does not apply. Moreover if a claim depends from a non-obvious independent claim, the claim is non-obvious (MPEP 2143.03).U.S. Patent 5,408,480, Hemmati

For the reasons stated above, among others, the Applicant traverse the rejections under 35 USC §103. As such, the Applicant feel that the Claims 1-25 are allowable. Therefore, the Applicant respectfully requests that a Notice of Allowance be issued.

Rule 1.121

Applicant hereby submits a marked copy of the amended claims as prescribed by 37 CFR § 1.121(c)(1)(ii).

CONCLUSION

Applicants have now made an earnest attempt to place this case in condition for allowance. For the foregoing reasons, among others, Applicants respectfully request full allowance of all the claims.

The Commissioner is hereby authorized to charge any additional fees or credit any overpayments to Deposit Account No. 50-1343 of Hughes & Luce, LLP.

Respectfully submitted,

HUGHES & LUCE, L.L.P.

Date: March 6, 2002

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